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09/682,642	10/01/2001	Kenji Nagai	SIMTEK6218	3686
25776	7590	04/06/2005	EXAMINER	
ERNEST A. BEUTLER, ATTORNEY AT LAW 10 RUE MARSEILLE NEWPORT BEACH, CA 92660			LE, DANG D	
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**GROUP 2000**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/682,642  
Filing Date: October 01, 2001  
Appellant(s): NAGAI, KENJI

Kabushiki Kaisha Morie  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 9, 2004, which is before September 13, 2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is deficient because it does not refer to page number or Drawings.

**(6) *Issues***

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The examiner withdrew the rejections of claims 1 and 16 as being anticipated under 35 USC 102(b) by DeBello (4,665,320).

**(7) *Grouping of Claims***

Art Unit: 2834

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because claims 10-15 depend on claim 1 and claims 17-19 and 23-30 depends on claim 16. Therefore, claims 1 and 10-15 stand or fall together and claims 16-19 and 23-30 stand or fall together.

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,353,658	NAGASHIMA ET AL.	10-1994
4,897,571	ISOZUMI	1-1990
4,618,790	KAKUDA ET AL.	10-1986
5,742,110	HEFNER	4-1998

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

*Claims 1, 10-13, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagashima et al. (5,353,658).*

Regarding claim 1, Nagashima et al. shows a rotating electrical machine (Figure 1) comprised of an outer housing assembly (middle portion) and a rotor including a rotor

Art Unit: 2834

shaft (2a) journaled therein, said rotor shaft having a drive portion (2b) extending outwardly beyond said outer housing assembly for driving relation with another shaft (8), said outer housing assembly being comprised of a stator shell closed at opposite ends thereof by first (left side) and second (right side) end caps, said first end cap providing an anti-friction bearing (ball bearing near 2b) journaling said rotor shaft adjacent said drive portion with said drive portion extending through said first end cap, said first end cap having attachment means (through hole for bottom screw) for providing a mounting connection to a body (1a) that journals the another shaft (8), said stator shell carrying a plurality of permanent magnets (top and bottom of rotor), said rotor having a plurality of windings cooperating with said permanent magnets, a commutator (right side, below 2) fixed to said rotor shaft at an end thereof spaced from said drive portion of said rotor shaft and in electrical communication with said rotor windings, fasteners (bottom screw) for affixing said end caps to each other and to opposite ends of said stator shell, a brush carrier fixed to said stator shell and carrying brushes (right side) cooperating with said commutator, and a plain bearing (left side) carried by said second end cap for journaling the end of said rotor shaft spaced from said drive portion.

Regarding claim 10, it is noted that Nagashima et al. also shows the end caps (left and right) being fixed to each other by threaded fasteners (bottom bolt) and the stator shell being sandwiched therebetween in Figure 1.

Regarding claim 11, it is noted that Nagashima et al. also shows the brush carrier being fixed to the second end cap (right side).

Regarding claim 12, it is noted that Nagashima et al. also shows the second end cap being affixed (by bolt) to a body (1a) that journals the another shaft (8).

Regarding claim 13, it is noted that Nagashima et al. also shows the machine comprising a starter motor for starting an internal combustion engine and the another shaft comprising a shaft associated with said engine (through gears 3 and 4).

Claims 16 and 17 are similar to claims 1 and 10, respectively. As a result, they are also rejected.

*Claims 14, 15, 18, 19, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi (4,897,571).*

Regarding claims 14 and 18, Nagashima et al. shows all of the limitations of the claimed invention except for the stiffening ribs.

Isozumi shows the stiffening ribs (21a) for the purpose of strengthening the end cap.

Since Nagashima et al. and Isozumi are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include the stiffening ribs as taught by Isozumi for the purpose discussed above.

Regarding claims 15 and 19, it is noted that Isozumi also shows the second end cap being formed with a mounting bracket (22) that is affixed to a body that journals the

Art Unit: 2834

another shaft and at least some of the stiffening ribs (21a) are integral with the mounting bracket (22).

Regarding claim 30, it is noted that Nagashima et al. also shows the machine comprising a starter motor for starting an internal combustion engine and the another shaft (8) comprising a shaft associated with said engine (through gears 3 and 4).

*Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi as applied to claim 19 above, and further in view of Kakuda et al. (4,618,790).*

Regarding claims 23 and 25, the machine of Nagashima et al. modified by Isozumi includes all of the limitations of the claimed invention except for the brush carrier carrying a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft.

Kakuda et al. shows the brush carrier (23) carrying a number of brushes (22) all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft for the purpose of providing electricity to the rotor coils.

(It is noted that in the art of motor and generator, it is well known to make the brush carrier with a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft as shown in Figure 16 of Moribayashi et al. (5,576,588)).

Since Nagashima et al., Isozumi, and Kakuda et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the brush carrier with a number of brushes all of which are confined in an area that encompasses not greater than 180 degrees around the rotational axis of the rotor shaft as taught by Kakuda et al. for the purpose discussed above.

Regarding claim 24, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to confine the brushes in an area that encompasses 90 degrees around the rotational axis of the rotor shaft, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

*Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagashima et al. in view of Isozumi and Kakuda et al. as applied to claim 25 above, and further in view of Hefner (5,742,110).*

Regarding claims 26-28, the machine of Nagashima et al. modified by Isozumi and Kakuda et al. includes all of the limitations of the claimed invention except for the four permanent magnets being formed from a high magnetic density material and the high magnetic density material comprising neodymium-iron-boron.



Hefner shows the permanent magnets being formed from a high magnetic density material and the high magnetic density material comprising neodymium-iron-boron for the purpose of increasing flux density.

Since Nagashima et al., Isozumi, Kakuda et al., and Hefner are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use neodymium-iron-boron magnets as taught by Hefner for the purpose discussed above.

Regarding claim 29, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to confine the brushes in an area that encompasses 90 degrees around the rotational axis of the rotor shaft, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

**(11) Response to Argument**

In the art of starter motors, it is well known that the rotor shaft are supported by ball bearing at one end of the shaft and plain bearing at the other end of the shaft for rotation as shown in Kurihara et al. (US Patent 4,440,033), which was not used in the rejection, but cited in PTO-892 dated 12/17/03. (It is noted that the examiner does not change ground of rejection with this Kurihara et al. reference.) See Figure 1 with shaft (6), ball bearing (7), and plain bearing (8, sometimes called bushing).

Nagashima et al. shows a similar structure in Figure 1 with bearings at both end of the shaft (2a). One having ordinary skill in the art would recognize that the bearing on the left is the ball bearing and the bearing on the right is the plain bearing. The ball bearing must have inner and outer races with round balls disposed therebetween. The roller and needle bearings must also require inner and outer races with solid cylindrical elements disposed therebetween. Nagashima et al. does not illustrate the right bearing as roller or needle bearing because there are no inner or outer races shown. As a result, the bearing on the right must be the plain bearing.

Even the applicant acknowledged that "... the prior art where the conventional practice with starter motors deals with the support of the starter motor shaft ends with an antifriction bearing such as a ball or roller bearing at the end where it engages the shaft of the engine being started and a plain bearing at the other, more lightly loaded end." See page 4 of Appeal Brief filed August 9, 2004 and page 1 of the specification.

Regarding the brushes and commutator features, one having ordinary skill in the art would also recognize that the elements shown at the right hand side in Nagashima et al. are the brushes and commutator. These features can also be found in Isozumi (4,897,571) and many other references cited by the examiner in PTO-892.

It is noted that in a drawing showing an airplane with wings, tails and landing gears, people would recognize these elements without any reference numerals. Likewise, people having ordinary skill in the art of motor and generator would easily recognize the ball bearing, the plain bearing, the brush, and the commutator as discussed above.

"The another shaft" in claims 1 and 16 could be any shaft. It must not be "the shaft of the engine being started". Claims 1 and 16 do not clearly indicate the shaft as "the shaft of the engine".

The examiner does not interpret element (1a) of Nagashima et al. as the first end plate. The first end plate is the one that supports the left bottom bearing, the bearing located directly above the left bottom bearing, and the switch (5). The shaft (2a) clearly protrudes outside the first end plate with the shaft end (1b) and then enclosed by the cover (1a).

"A body that journals the another shaft" could also be anything. It must not be the engine. The claims do not precisely identify the body as the engine. Nagashima et al. clearly shows the second end closure (right hand side element supporting the plain bearing and brushes) to be affixed to a body (1a) that journals the another shaft (8) with the bolt. It is noted that claims 12 and 13 do not recite the reinforcing ribs formed on the second end cap as the applicant mistakenly pointed out in page 5 of the Appeal Brief.

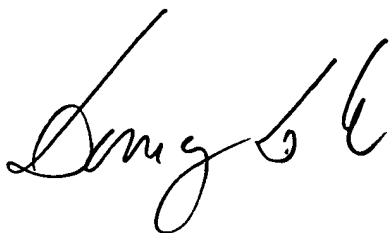
The examiner would also like to point out a fact that it is well known in the art of motor and generator to form the end cap with the reinforcing ribs. Isozumi (4,897,571), and Kitahata (5,008,574) show these features in Figure 4 with cap (21), ribs (21a), brushes (5a, 5b) and in Figures 2-5 with cap (30), ribs (50, 52, 54, 56, 58, 60), and brushes 90, 92), respectively. (It is noted that the examiner does not change ground of rejection with Kitahata reference.) In addition, Isozumi does not have to show the "reinforced end plate is affixed to the engine body directly" because the claims do not recite that the second end cap to be affixed to "the engine body directly".

Art Unit: 2834

Regarding claims 23-29, because the applicant chose not to occupy the Boards time with unnecessary argument, the examiner neither dares to occupy the Boards time with unnecessary responses.

For the above reasons, it is believed that the rejections should be sustained.

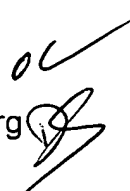
Respectfully submitted,



DANG LE  
PRIMARY EXAMINER

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March 24, 2005

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